

DISCLAIMER: This report is a result of work by the staff of the California Energy Commission. Views expressed in this paper are those of the authors and may not necessarily represent those of the State of California or the California Energy Commission.

Options for Modifying the *ER96* “Need Cap” Integrated Assessment Of Need Conformance Test

Introduction

The Energy Commission has the exclusive authority to certify thermal power plants of 50 megawatts or more in California and related transmission lines. (Pub. Resources Code, § 25500.) As a general matter, the Energy Commission must make “findings regarding the conformity of the proposed facility with the integrated assessment of need for new resource addition... or, where applicable, findings... regarding the conformity of a competitive solicitation for new generation resources with the integrated assessment of need for new resource additions” contained in the most-recently adopted ***Electricity Report (ER)*** before the Energy Commission may certify the plant. (Pub. Resources Code, § 25305(a)-(f), 25308, 25309(b), 25523(f), 25523.5, 25524(a), 25540.6(a)(5), 25541.) The Energy Commission is prohibited from certifying any facility if this finding is not in the affirmative (§ 25524).

The integrated assessment of need in ***ER 96***, the most recent ***Electricity Report***, recognized that “the state's primary electricity challenge is to develop a fully competitive market among generators and other service providers, without losing the benefits gained from state energy policies in the past twenty years . . . government should not prevent investors from putting their money where they believe the investments will be competitive.” (***ER 96***, pp. 67, 68.) As a result, ***ER 96***, like its predecessor ***ER 94***, contains a simple need test:

“In sum, the ***ER 96*** need criterion is this: during the period when ***ER 96*** is applicable, proposed power plants shall be found in conformance with the Integrated Assessment of Need (IAN) as long as the total number of megawatts permitted does not exceed 6,737.” (***ER 96***, p. 72.)

The 6,737 megawatt number was based on a straightforward comparison of likely demand with potential supplies. The Energy Commission also recognized that changing circumstances might require revisions to that test:

If during the pendency of **ER 96** the total number of megawatts permitted exceeds 6,737 (a prospect that is extremely unlikely), the **ER 96** Standing Committee shall re-assess the situation and recommend appropriate action for the Energy Commission. . . . **ER 98** may be delayed or eliminated. If there is no **ER 98**, then interested persons may petition the **ER 96** Standing Committee to recommend revisions to the need test. (**ER 96**, p. 72.)

The Energy Commission currently has before it applications for a total of 2,763 megawatts of new power plant capacity, and current information indicates that we may receive applications for as many as 6,360 more megawatts during 1999. There is a perception that some of the applications are being filed not because plants are ready to be built but merely to get them in line before the 6,737 megawatt limit is reached. In addition, since the adoption of **ER 96**, the competitive market has begun to function, and we now have actual operating experience against which to measure our expectations of how that market might function. Because of the changes in circumstances since the adoption of **ER 96**, it is appropriate to consider revising the **ER 96** need test. The Energy Commission has directed the Staff to prepare a paper that analyzes options for revising the need cap.

Background

In the late 1960s and early 1970s, California's investor-owned utilities proposed constructing many large, central station power plants. Electricity growth rates of seven percent per year, which had been the industry experience during the 1950s and 1960s, were projected to continue. At this rate of growth, California's electricity supply system would double in the span of ten years. The Legislature became concerned that the projected growth rates were unrealistically high, that utility planning did not reflect energy efficiency as a serious option, and that the cost and environmental impact of so many power plants would be unacceptable. Concurrently, the utilities were concerned that obtaining multiple permits from state and local agencies for proposed power plants would result in duplicative and conflicting requirements, unnecessary regulatory delays, and increased costs. The environmental community was concerned that approval of these facilities by agencies was occurring "behind closed doors"; without appropriate environmental, health and safety review; and without full consideration of long-term public policy objectives.

In response to these divergent concerns, the Legislature and Governor recognized the public's interest and the state's responsibility in ensuring an adequate supply of electricity. They approved the Warren-Alquist Act, creating the Energy Commission and giving it exclusive authority to permit power plants 50 MW and above and all related facilities. The Act contained key directives for the Energy Commission to consider the feasibility of energy efficiency as an alternative to additional power

plants and to examine in detail the credibility of the utilities' electricity growth projections. The Energy Commission was required to prepare an "integrated assessment of need" to be used "...as the basis of planning and approving new resource additions..." including new thermal power plants in the Commission's jurisdiction (PRC § 25309 (b), PRC § 25523 (f)). This integrated assessment of need was to be based on the Commission's analysis of the following factors:

1. An evaluation of the environmental, economic, and health and safety implications of constructing and operating proposed energy facilities (power plants and transmission lines) (PRC, § 25305(a))
2. A discussion of reasonable alternative technologies (PRC 25305(b))
3. A 5- and 12-year forecast of the demand for electrical energy and capacity considering energy conservation, load management and other demand reducing measures (PRC, § 25305(c))
4. An evaluation of ways the projected annual rate of electrical demand growth can be reduced (PRC, § 25305(d))
5. The level of electrical demand that will reasonably balance:
 - Growth and development
 - Protection of public health and safety
 - Preservation of environmental quality
 - Maintenance of a sound economy
 - Conservation of energy and resources reasonably expected to occur (PRC, § 25305(e))
6. Probable capacity additions consistent with the level of demand (PRC, § 25305(f))

The Act also anticipated that the Energy Commission would evaluate the trends in energy supply and demand; statewide demographic and economic factors which would effect the demand and supply of energy; and the social, economic and environmental implications of these trends (PRC, § 25309 (a), (e) and (f)). These evaluations were to be the basis of state policy recommendations by the Energy Commission to the Governor, Legislature and other agencies (PRC, § 25309).

Over the last 23 years, the Energy Commission considered a variety of public policy objectives in developing the integrated assessment of need in the **Electricity Report** (see Table 1). These policy objectives and the integrated assessment of need have been used by the Energy Commission to establish specific "need tests" for evaluating the energy facility proposals in its jurisdiction. The Energy Commission's "need cap" was the result of this comprehensive process. The "need cap" represented the

amount of generation deemed necessary to sustain a reliable electricity system in light of the aggregate impact of constructing and operating the existing and expanded electricity system.

In 1993, the Legislature recognized that California was moving in the direction of creating a more competitive market for electricity. It passed AB 1884 with two provisions that facilitated the timely regulatory review of new, competitive power plants. It required the Energy Commission to make an affirmative finding of need if a proposed power plant was either the result of the California Public Utilities Commission's mandated utility bid proposal for new plants or "a utility's competitive solicitation for new generation resources which limits the amount of new generation to an amount of capacity or energy at or below the amount of energy or capacity determined to be needed for the utility through the integrated assessment of need..." (PRC, § 25523.5 (b)). It also provided an exemption from the Notice of Intent (a preliminary step in the permitting process that evaluates site alternatives) for gas-fired power plants that are "the result of a competitive solicitation or negotiation for new generation resources (PRC, § 25540.6(a)(1)).

The **1994 Electricity Report (ER 94)** responded to these directions and the movement to a competitive market by changing the "need tests" for evaluating the number, type, attributes and total generating capacity of new energy facilities. **ER 94** stated that:

"...need conformance tests should not stand in the way of power plant development, if the plant is functioning in a competitive environment, at least as long as new plants are within the amount of capacity found potentially beneficial in the Commission's integrated assessment of need." (page 133)

Table 1
Primary Public Policy Components of Need Conformance in
Previous Electricity Reports

	Reduce Fossil Fuel Use	Provide for Alternative Energy	Maintain System Reliability	Account for Generation Efficiency	Emphasize Economic Need	Allow for Added Benefits	Use of Resource Selection Process	Rely on Market Forces
ER 2	X							
ER 3	X	X						
ER 4	X	X						
ER 5		X	X					
ER 6		X	X		X			
ER 7		X	X	X	X	X		
ER 90		X	X		X	X	X	

ER 92		X	X		X	X	X	
ER 94			X		X		X	X
ER 96			X		X			X

The report went on to establish three “need tests” including a test for merchant facilities. It determined that any merchant power plant would be found needed “...up to one half the total state-wide capacity identified in the 12 year level of demand...” (page 134). Any power plants that would cause the total generation certified by the Energy Commission to exceed that amount, or 3,290 megawatts, was to be evaluated under a need test for non-merchant facilities. The non-merchant need test retained the more traditional cost-effectiveness evaluation and, like the need test for merchant plants, balanced:

- Requirements of growth and development
- Protection of public health and safety and preservation of environmental quality
- Maintenance of a sound economy
- Demand-reducing measures reasonably expected to occur

Although the new need test for merchant plants was a substantial departure from any previous implementation of the Warren-Alquist Act’s requirements for siting facilities in conformance with an integrated assessment of need, it recognized that one of the major reasons for tightly controlling “need” for new facilities in the past had been the fact that California’s utility ratepayers would be held financially responsible for expensive facilities that turned out to be unnecessary. **ER 94** stated that previous need criteria assumed “...ratepayers were required to shoulder the financial risks of new power plants only if the plant (1) were necessary to ‘keep the lights on’ or (2) would lower total system costs in the long run.” (pages 131-132). It noted that “the need to protect ratepayers from unneeded power plants arises in part from the current system of utility regulation.” but observed that “in an unregulated competitive markets customers do not bear such costs.” (page 132) Consequently, when facilities are financed and underwritten by investors who take these risks instead of captive utility ratepayers, the state has much less reason to impose a strict limitation on the amount of capacity that can be built or can exist in the market at any given time. The Energy Commission viewed this action as fully consistent with its regulatory requirements and the realities of the new emerging competitive market structure.

The **1996 Electricity Report (ER 96)** continued the “hands-off” approach initiated in the previous Report for evaluating the need of proposed power plants that do not put ratepayers at financial risk. The only need test adopted was that “...proposed power plants shall be found in conformance with the integrated assessment of need as long as the total number of megawatts permitted does not exceed 6,737.” (page 72)

Summary of Need Cap Options

Four options have been identified for dealing with the **ER 96** need cap:

1. Eliminate the “need cap” until the next **Electricity Report** is adopted. -

ER 96 clearly did not anticipate the plethora of projects that are now coming before the Energy Commission, and did not envision that the need cap might be exceeded. Nevertheless, it is encouraging to see that the existence of the market appears to have stirred California power plant developers out of their lengthy building hiatus. Indeed, the larger concern as **ER 96** was being debated was whether market incentives would be adequate to entice any new entrants. Further, when the need cap was instituted, the market was still in its formative stages. Since then, the pace of direct access has quickened and it has become quite apparent that the merchant plants being proposed today will enjoy no guarantees from captive ratepayers. The need cap and the modicum of control it might have provided are thus no longer necessary, as the operation of the market itself in effect serves that ratepayer protection function.

To facilitate the public policy goal expressed in AB 1890 of developing a competitive market and lowering electricity prices, the Energy Commission could temporarily eliminate the **ER 96** need cap until the integrated assessment of need and the need criteria are developed in the next **Electricity Report**.

Comments - This option would eliminate any uncertainty or perception of “scarcity” caused by the need cap and may reduce the pressure on applicants to file applications with the Energy Commission that may be premature or incomplete and consequently waste resources both of the applicant and state. It is consistent with the objectives of increasing competition for electricity generation and could be implemented rapidly and consequently not prolong any uncertainty.

This option lacks the analytical or policy basis of the integrated assessment of need as defined in PRC § 25309 and appears to eliminate the link between the integrated assessment of need and the certification of new energy facilities required by PRC § 25523 (f).

Whether the need cap can be set aside is an open legal question. What is not open to debate is that under current law no project can be certified unless it is found to be in conformance with the integrated assessment of need. The present need cap resulted from the integrated assessment of

need performed as part of ER 96. Since the need cap is enmeshed within the integrated assessment of need, it may be argued that elimination of the need cap is not permissible without an accompanying revision of the rationale underlying the integrated assessment of need itself. This is not to say that the law necessarily requires the establishment of any need cap. As discussed in Option 3, an appropriately revisited and revised integrated assessment of need could result in a need conformance policy that did not retain a need cap.

2. Modify the need cap, if appropriate, based on an updated demand and supply analysis. -

The **ER 96** need cap was based on an analysis of demand and supply data available in 1994 and 1995. This analysis could be updated using more current data and assumptions and a new cap established.

Comments - This option has an analytical basis (the same basis as the current need cap) and if the assumptions and data are updated, it may be that the need cap will be higher than 6,700 MW. Much of the currently available data needed for this analysis, however, is now somewhat dated. Critical items that have undergone such significant change that public analysis would be required include: the applicable reserve margin, estimates of future demand-side management, whether the state or the interconnected WSCC is the relevant planning region, treatment of interruptible load management, and how many of the power plants now proposed should be included in a reference scenario.

The analytic underpinning of the integrated assessment of need used in **ER 96** may not be the most appropriate to facilitate the competitive market for California. It reflected a comparison between demand and supply and did not reflect the features of competition as it has been observed in the past nine months. Even if the cap were raised, it may only delay the time when it causes uncertainty or a sense of “scarcity”. Because of the implications this analysis would have for the approval and financing of new energy facilities, there will be considerable interest in the data, assumptions, and results of the analysis and thus a proceeding that modifies the analysis could be lengthy.

3. Modify the rationale for the IAN conformance test. -

When **ER 96** was adopted by the Energy Commission, AB 1890 had been in law for less than 6 months and implementation of its specific provisions

were only being initiated. In the subsequent year and a half, both the ISO and Power Exchange have been activated, the utility power plants are being sold and the dynamics of the competitive market are just beginning to emerge. Although significant details associated with the restructured industry still need to be resolved, the Energy Commission may want to modify the integrated assessment of need to ensure the development of a more robust market and send specific short-term signals to the emerging market.

For example, the integrated assessment of need could be modified to reflect the concept of “bid sufficiency” to ensure that a robust generation supply exists to allow true competition in all of the electricity markets that operate in California. Such an integrated assessment of need could be based on the economic theory that until there is a substantial amount of excess supply in a market (perhaps on the order of 140 percent of demand), robust competition among suppliers would not exist and allow that amount of merchant power plants to be built. This option could be augmented to meet the analytical requirements for an integrated assessment of need and incorporate policy factors reflecting the characteristics and needs of market operation as they are currently understood in California.

Alternatively, the integrated assessment of need could be updated based on a review of the needs of the emerging market and operation of the system. We are persuaded that the economic well-being of the state, its electricity consumers, and the adequacy of electricity supply are all best served by our encouragement of vigorous, robust competition, within market rules which prevent abuse of market power, develop consumers’ ability to participate actively in the market, and protect both the environment and public health and safety. We accept that, as part of a competitive system, not all power plants will maintain sufficient market share to be profitable, and there may be times when more plants are available than are necessary to serve demand. We reiterate our commitment to enforce all environmental protection laws and to assure the state’s citizenry that the Energy Commission will certify no plant that would create an unmitigated adverse environmental impact.

Accordingly, the Energy Commission could determine that, until a new Electricity Report is adopted by the Energy Commission, all merchant plants, regardless of fuel type, would be found to conform with the integrated assessment of need even if they are in excess of the need cap established in *ER 96* provided that the Energy Commission does not make a finding that there is a net system detriment caused in whole or in part by the applicant’s facility, which cannot be reasonably mitigated.

Yet another possibility is that in the process of modifying the integrated assessment of need, the Energy Commission might conclude that the most appropriate balance of the requirements for growth and development, protection of public health and safety, preservation of environmental quality, maintenance of a sound economy, and conservation of energy and resources reasonably expected to occur, is achieved by the maximal encouragement of competition. Such a finding might then serve as the underlying rationale leading to a revised **ER 96** need conformance policy that, for the pendency of **ER 96**, would declare all plants to be in conformance with the integrated assessment of need, without regard to any need cap limitation.

Comments - Depending on how the integrated assessment of need was modified, new plants could face no need hurdles at all, or substantially lower ones unless a new integrated assessment of need is adopted. Competition would likely increase.

Analysis and public debate would be needed to develop the definition and measurement of net system detriment, so that applicants would have reasonable assurance that they understood the test they were being required to meet. For example, is the test that the applicant cause no new system congestion or is it that there is a market process in place for the costs of congestion to be recovered? The Independent System Operators and municipal system operators would need to assist in the development of the test, since the impacts of a project on the inter-connected system are, in part, determined by the market rules set by system operators.

Specific proposals are needed to implement this policy direction. The December 2, 1998 workshop is a venue for exploring it in greater detail.

4. Maintain the need cap until the next **Electricity Report** is adopted. -

ER 96 is not clear what action the Energy Commission should take if an applicant seeks to obtain certification for a power plant whose generation capacity exceeds the need cap. This circumstance is likely to be before the Energy Commission in the summer of 2000. At the present time, the Energy Commission has not established an **ER** Committee and does not have a schedule for preparing and adopting a subsequent **Electricity Report**.

Comments - This option continues the uncertainty associated with the **ER 96** need cap and is likely to continue any rush to file applications with the Energy Commission before the cap is exceeded.

Recommendation

Staff recommends that the **ER 96** need cap and integrated assessment of need be reviewed as described in Option #3, in light of current electricity demand and supply as well as other policy considerations such as the needs of the competitive market.